

BSPM 308 Ecology and Management of Weeds – 2007 Syllabus

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Lecture: T and Th 9:00 – 9:50 a.m., 118 Shepardson

Lab: M, T, W, or Th 2:00 PM – 4:50 PM, E009 Plant Sciences

Course Objectives

1. To become familiar with important weed and invasive plant species
2. To be able to identify 22 plant families
3. To understand methods of weed control and research.
4. To apply selected methods to address a scientific question or create a weed management plan in an individual student project.
5. To understand some aspects of weed physiology and ecology and methods of cultural control.
6. To understand and to be able to apply the general principles of chemical weed control and to be familiar with some of the classes of chemicals involved.

Required text:

Applied Weed Science, Merrill Ross & Carole Lembi, Prentice Hall, 1999.

Laboratory manual (available in CSU Bookstore as course packet)

Recommended text:

Weeds of the West, T. Whitson ed., University of Wyoming, 2001.

Assignment Outline

Class	Activity	Date	Points
Lecture	3 midterm exams	Th 9/20, 10/18, 11/15 (drop lowest)	150
Lecture	Final exam (cumulative)	Th 12/10 (11:20 am – 1:20 pm)	100
Lecture	Quizzes	Unannounced	50
Lab	3 plant ID quizzes	Week of 9/24, 10/29, 11/26 in lab	60
Lab	2 lab content quizzes	Week of 10/1 and 11/7 in lab	30
Lab	Calibration problems	Due week of 10/15 in lab	20
Lab	Project protocol	Due week of 9/10 in lab	10
Lab	Project execution		30
Lab	Preliminary project report	Due Th 11/8 in lecture	20
Lab	Project presentation	Presentations week of 12/3 in lab	30
Lab	Final project report	Due Th 12/6 in lecture	30
Lab	Participation		<u>70</u>
Total points			600

Lecture

1. There will be three (3) midterm exams (not cumulative), each worth 75 points, and a cumulative final exam, worth 100 points. The midterms will be given during class (50 minutes) and the final exam will be given during the scheduled 2 hour final examination period. The **midterm exams** will be a combination of short answer, multiple

choice, true/false and essay questions. One (1) essay question worth 30 points will be included on each midterm exam. It will be selected from a list of possible essay questions that will be handed out before the exam. You should prepare answers to all of these potential questions before the exam. Your answers will be graded not only on content, but organization, mechanics (spelling and grammar) and development of arguments to support your answers. Only your two highest midterm scores will count toward your final grade. The **final** exam will be cumulative and will be comprised of short answer, multiple choice and true/false questions (i.e. no essay question). The material covered by exams will include what has been presented in lecture and assigned as reading.

2. Quizzes – Unannounced quizzes will be given periodically. If you come to class, you will be able to earn full credit on these tests.

Laboratory

1. Three (3) weed identification quizzes worth 20 points each will be given during lab. Each will include the identification of 10 of the 20 weeds introduced during that section of the course (family, common name, genus and species) (i.e. not cumulative). You will be expected to know the identifying characteristics of each of the plant families covered during that section of the course.
2. Two (2) content quizzes worth 15 points each with short answer and multiple choice questions as well as problems to solve on topics presented in that section of the course.
3. One calibration problem set worth 20 points will be assigned. You may work with others to solve the problems, but must turn in your own work. This material will be on a lab quiz, so you must be capable of doing these problems on your own without assistance.
4. Individual Project (120 points total) – Each student will conduct an experiment or develop a weed management plan during the semester. Students will share their findings through a written report and an oral presentation.
5. Participation (70 points total) – Approximately 5 points will be awarded for work associated with each lab.

Grading – Letter grades are assigned on the basis of percentage of points earned. Grades are not determined using a curve, but a straight scale. The percentage cutoff for each grade may change in a given year, but is approximately as follows: A+ 97-100%, A 93-96.9%, A- 89-92.9%, B+ 87-88.9%, B 83-86.9%, B- 79-92.9%, C+ 77-78.9%, C 73-76.9%, C- 69-72.9%, D+ 67-68.9%, D 63-67.9%, D- 59-62.9%, F <59%.

Late Work Grading Policy - 10% will be subtracted from the total score for any assignment that is turned in late and no credit will be given for work turned in more than seven days late.

Grading Issues – Questions regarding grading for individual assignments should be raised with the instructor or teaching assistants within two weeks after graded assignments are returned to students.

You are expected to attend all meetings of the lectures.

You must attend the laboratory section for which you are registered.

Lecture Outline	Approximate	Reading in
General Topic	Lecture Dates	Ross & Lembi
Course introduction	Aug 21	Handouts
Weed definitions, impacts & classification	Aug 23, 28	Ch. 1, M & B Ch. 1&2
Project research - library	Aug 30	
Weed biology	Sep 4, 6, 11, 13, 18	Ch 2 & 3
Midterm Exam #1	Sep 20	
Weed ecology & evolution	Sep 25, 27, Oct 2	
Herbicide interactions with soil & plants	Oct 4, 9	Ch 7, 6, respectively
Midterm Exam #2	Oct 18	
Herbicide resistance & modes of action	Oct 11, 16, 23, 25	Ch 5, 8, 9, 10, 11, 12
Non-chemical weed control & management	Oct 30, Nov 1, 6, 8, 13	Ch 4 & 18
Midterm Exam #3	Nov 15	
Thanksgiving break-no class	Nov 20, 22	
Weed management in turf & landscapes	Nov 27, 29	Ch 14, 20
Successional weed management	Dec 4	Handout, Ch 13
Final Exam	M Dec 10	11:20 am – 1:20 pm

Laboratory Outline

- Week 1** (8/20-24) Introductions, weed identification activity, individual student projects, take student photos
Lab manual: Chapter 1 & 2
- Week 2** (8/28-8/30) Weed identification activity; Integrated Weed Management Plans; visit herbarium
Lab manual: Chapter 4 and *Creating an Integrated Weed Management Plan* Ch III, IV, V and VI
- Week 3** (9/3-9/7) **Labor Day – No lab.** Students meet individually with instructors to discuss projects
- Week 4** (9/10-9/14) Weed identification activity; Weed research & vegetation sampling (*field trip*)
Lab manual: Chapter 3
Individual student project protocols due in lab
- *Week 5** (9/17-9/21) Weed identification activity; Set-up individual student projects
Lab manual: none
- Week 6** (9/24-9/28) Weed identification activity; Herbicide labels, formulations and compatibility
Lab manual: Chapter 5 & 6
Plant ID Quiz #1
- Week 7** (10/1-10/5) Weed identification activity; Application equipment, introduction to sprayer calibration and problems
Lab manual: Chapter 7
Content Quiz #1
- Week 8** (10/8-10/12) Weed identification activity; Sprayer calibration and problems (*on campus*)
Lab manual: Chapter 8
- *Week 9** (10/15-10/19) Weed identification activity; Soil aspects of herbicides
Lab manual: Chapter 9
Calibration problem set due in lab
- Week 10** (10/22-10/26) Weed identification activity; Pesticide Safety & Equipment
Lab manual: none
- Week 11** (10/29-11/2) Weed identification activity; Herbicide modes of action and injury symptoms CD (*computer room*)
Lab manual: Chapters 10 & 11
Plant ID Quiz #2
- Week 12** (11/5-11/9) Weed identification activity; Herbicide injury symptoms (*greenhouse*)
Lab manual: Chapter 10
Content Quiz #2
Preliminary project report due in lecture
- *Week 13** (11/12-11/16) Weed identification activity; Project data collection and clean-up
- Week 14** (11/19-11/23) **Fall Recess – No lab**
- Week 15** (11/26-11/30) Project data analysis and graphing (*computer room*)
Lab manual: Chapter 12
Plant ID Quiz #3
- Week 16** (12/3-12/7) Individual student project presentations
Final project report due in lecture

*Lecture midterm this week.